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EXAMINER
AHLUWALIA, NAVNEET K

ART UNIT	PAPER NUMBER
2166	

NOTIFICATION DATE	DELIVERY MODE
05/14/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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	Application No.	Applicant(s)
	10/823,845	LIN, DAVID HSING
Office Action Summary	Examiner	Art Unit	
	NAVNEET K. AHLUWALIA	2166	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>19 January 2009</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-22</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-22</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1.   In view of the Appeal Brief filed on 01/19/2009, PROSECUTION IS HEREBY

REOPENED. A new ground of rejection is set forth below.

2.   If an appellant wishes to reinstate an appeal after prosecution is reopened,

appellant must file a new notice of appeal in compliance with 37 CFR 41.31and a

complete new appeal brief in compliance with 37 CFR 41.37. Any previously paid

appeal fees set forth in 37 CFR 41.20 for filing a notice of appeal, filing an appeal brief,

and requesting an oral hearing (if applicable) will be applied to the new appeal on the

same application as long as a final Board decision has not been made on the prior

appeal. If, however, the appeal fees have increased since they were previously paid,

then appellant must pay the difference between the current fee(s) and the amount

previously paid. Appellant must file a complete new appeal brief in compliance with the

format and content requirements of 37 CFR 41.37(c) within two months from the date of

filing the new notice of appeal. See MPEP § 1205.

Response to Arguments

3.   Claims 1 – 22 are pending in this Office Action. After a further search and a

thorough examination of the present application, claims 1 – 22 remain rejected.

4.   Applicant's arguments with respect to claims 1 – 22 have been considered but

are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

6.   Claims 1 – 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Gao et al. ('Gao' herein after) (US 6,898,650 B1) further in view of Scott T. Marcotte

('Marcotte' herein after) (US 6,449,614 B1).

With respect to claim 1,

        Gao discloses a method for retrieving data comprising: locking a linked list

(column 2 lines 46 – 54, Gao); retrieving data from an element in the linked list and also

advancing to a subsequent element while a breakpoint is not encountered (figure 3 and

column 3 lines 39 – 67, Gao); marking the subsequent element in the linked-list as in-

use when a breakpoint is encountered (column 3 lines 39 – 50, Gao); creating a

recommencement reference to the subsequent element (column 4 lines 36 – 49 and 62

– 67, Gao discloses the breakpoint being encountered using figure 5 A&B using

elements 510 and 525, creating a recommencement reference to a subsequent element

in Gao is clearly found in column 2 lines 46 – 58, column3 lines 9 – 16 and lines 56 –

59. when the breakpoint has been marked and the flag set as in-use the

recommencement point is the one at breakpoint when the flag is unset or search for

another container is made according the algorithm in figure 5A&B) and unlocking the

linked list (column 4 lines 60 – 66, Gao).

    Gao however does not disclose the relinquishing of control as a requirement as

explicitly being claimed in definition of breakpoint.

    Marcotte discloses the condition where relinquishing of control may be required

and this is explained in figure 2 and column 7 lines 26 – 65. Here Marcotte discloses

how the lock that is help can be in a priority state and thus queue would have to

wait, similarly if the queue that was requiring the lock was in priority state the current

item would have to relinquish the lock.

    It would have been obvious to one of ordinary skill in the art of data processing at

the time of the present invention to combine the teachings of cited references because

both inventions are directed to the same field of study of lists and locks in data

processing. Furthermore, the state of priority and the lock and its release capabilities of

Marcotte reduce lock contention of Gao's method (column 4 lines 4 – 39, Marcotte).

7.   Claims 2 – 4 are rejected under the same rationale as claim 1 above. For further

citations and references see below.

With respect to claim 2,

    Gao as modified discloses the method of claim 1 further comprising: locking the

linked list (column 2 lines 46 – 54, Gao); determining a subsequent element in the

linked list according to the recommencement reference (column 5 lines 1 – 9, Gao); and

retrieving data from the determined subsequent element (column 5 lines 10 – 17, Gao).

With respect to claim 3,

Gao as modified discloses the method of claim 1 wherein creating a
recommencement reference to the subsequent element comprises: retrieving a pointer
to the subsequent element (column 2 lines 46 – 54, Gao); determining a process
identifier for a current process (column 2 lines 64 – 67 and column 3 lines 1 – 8, Gao);
and associating the pointer with the process identifier (column 3 lines 64 – 67 and
column 4 lines 1 – 9, Gao).

With respect to claim 4,

Gao as modified discloses the method of claim 1 wherein marking the
subsequent element in the linked-list as in-use comprises maintaining a count of the
quantity of processes that require additional access to the element (figure 3 and column
3 lines 39 – 51, Gao).

With respect to claim 5,

Gao discloses a method for deleting an element from a linked list comprising:
determining if the element to be deleted is in-use (column 5 lines 10 – 21, Gao);
updating a recommencement reference to the element to refer to a data element that is
subsequent to the data element to be deleted when the element in is in-use (Table 14,
Gao); and deleting the element (column 5 lines 25 – 43, Table 14, Gao).

Gao however does not disclose the relinquishing of control as a requirement as explicitly being claimed in definition of breakpoint.

Marcotte discloses the condition where relinquishing of control may be required and this is explained in figure 2 and column 7 lines 26 – 65. Here Marcotte discloses how the lock that is help can be in a priority state and thus the queue would have to wait, similarly if the queue that was requiring the lock was in priority state the current item would have to relinquish the lock.

It would have been obvious to one of ordinary skill in the art of data processing at the time of the present invention to combine the teachings of cited references because both inventions are directed to the same field of study of lists and locks in data processing. Furthermore, the state of priority and the lock and its release capabilities of Marcotte reduce lock contention of Gao's method (column 4 lines 4 – 39, Marcotte).

8.   Claim 6 is rejected under the same rationale as claim 5 above. For further citations and references see below.

With respect to claim 6,

Gao as modified discloses the method of claim 5 wherein updating a recommencement reference to the element comprises: discovering a pointer associated with a process identifier (column 5 lines 1 – 9, Gao); disassociating the process identifier from the pointer; determining a pointer to a subsequent element (column 5 lines 10 – 17, Gao); and associating the process identifier with the newly determined pointer (column 2 lines 64 – 67 and column 3 lines 1 – 8, Gao).

With respect to claim 7,

Gao discloses an apparatus for storing and retrieving data comprising: processor capable of executing an instruction sequence, memory for storing an instruction sequence, input unit for receiving data (Figures 1, 5A and 5 B, Gao); first output unit for providing data according to a received data request, one or more ancillary output units for providing data according to a received data request (column 2 lines 46 – 54, Gao); instruction sequences stored in the memory including: data storage module that, when executed by the processor, minimally causes the processor to: receive data from the input unit allocate a data element to accommodate the data create a reference to the data element (column 5 lines 1 – 9, Gao); store the reference in at least one of a header pointer and a forward pointer included in a preceding data element and store the data in the data element (column 1 lines 29 – 43, Gao); data service module that, when executed by the processor, minimally causes the processor to: recognize a data request from the first output unit to the exclusion of all other data requests (column 3 lines 51 – 62, Gao); provide data to the first output unit from a data element according to a data element reference and also advance the data element reference to a subsequent data element while a breakpoint is not encountered (column 2 lines 31 – 38, Gao); mark a subsequent data element as in-use when a breakpoint is encountered (column 3 lines 39 – 50, Gao); create a recommencement reference to a subsequent data element column 4 lines 36 – 49 and 62 – 67, Gao discloses the breakpoint being encountered using figure 5 A&B using elements 510 and 525, creating a recommencement reference

to a subsequent element in Gao is clearly found in column 2 lines 46 – 58, column3

lines 9 – 16 and lines 56 – 59. when the breakpoint has been marked and the flag set

as in-use the recommencement point is the one at breakpoint when the flag is unset or

search for another container is made according the algorithm in figure 5A&B); and

enable recognition of other data requests (column 4 lines 60 – 66, Gao).

Gao however does not disclose the relinquishing of control as a requirement as

explicitly being claimed in definition of breakpoint.

Marcotte discloses the condition where relinquishing of control may be required

and this is explained in figure 2 and column 7 lines 26 – 65. Here Marcotte discloses

how the lock that is help can be in a priority state and thus the queue would have to

wait, similarly if the queue that was requiring the lock was in priority state the current

item would have to relinquish the lock.

It would have been obvious to one of ordinary skill in the art of data processing at

the time of the present invention to combine the teachings of cited references because

both inventions are directed to the same field of study of lists and locks in data

processing. Furthermore, the state of priority and the lock and its release capabilities of

Marcotte reduce lock contention of Gao's method (column 4 lines 4 – 39, Marcotte).

9.   Claims 8 – 12 are rejected under the same rationale as claim 7 above. For

further citations and references see below.

With respect to claim 8,

Gao as modified discloses the apparatus of claim 7 wherein the data service

module, when executed by the processor, further minimally causes the processor to:

recognize a data request from the first output unit to the exclusion of all other data

requests (column 2 lines 46 – 54, Gao); and provide data to the first output unit from a

data element according to the recommencement reference (column 5 lines 1 – 9, Gao).

With respect to claim 9,

Gao as modified discloses the apparatus of claim 7 wherein the data service

module causes the processor to create a recommencement reference by minimally

causing the processor to: retrieve a pointer to a data element subsequent to a current

data element (column 2 lines 64 – 67 and column 3 lines 1 – 8, Gao); determine an

identifier associated with the data request received from the first output unit and store

the retrieved pointer and the determined identifier in an associative manner (column 3

lines 64 – 67 and column 4 lines 1 – 9, Gao).

With respect to claim 10,

Gao as modified discloses the apparatus of claim 7 wherein the data service

module causes the processor to mark a subsequent data element as in-use by

minimally causing the processor to increment a use counter included in a subsequent

data element (figure 3 and column 3 lines 39 – 51, Gao).

With respect to claim 11,

Gao as modified discloses the apparatus of claim 7 wherein the data service

module further minimally causes the processor to receive a delete data request from an

output unit by minimally causing the processor to: determine if a data element to be

deleted is in-use (column 5 lines 10 – 21, Gao); update a recommencement reference

to refer to a data element that is subsequent to the data element to be deleted (Table

14, Gao); and delete the data element according to the received delete data request

(column 5 lines 25 – 43, Table 14, Gao).

With respect to claim 12,

Gao as modified discloses the apparatus of claim 11 wherein the data service

module causes the processor to update a recommencement reference by minimally

causing the processor to: discover a pointer according to a data request identifier

(column 5 lines 1 – 9, Gao); and replace the pointer with a pointer to a data element that

is subsequent to the data element to be deleted (column 5 lines 10 – 17, Gao).

With respect to claim 13,

Gao discloses a computer readable medium having imparted thereon one or

more instruction sequences for storing and retrieving data comprising: data storage

module that, when executed by a processor, minimally causes the processor to: receive

data from an input unit, allocate a data element to accommodate the data (Figures 1, 5A

and 5 B, Gao); create a reference to the data element (column 5 lines 1 – 9, Gao) store

the reference in at least one of a header pointer and a forward pointer included in a

preceding data element and store the data in the data element (column 1 lines 29 – 43,

Gao); data service module that, when executed by a processor, minimally causes the

processor to: recognize a data request from a first output unit to the exclusion of all

other data requests (column 3 lines 51 – 62, Gao); provide data to a first output unit

from a data element according to a data element reference and also advance the data

element reference to a subsequent data element while a breakpoint is not encountered

(column 2 lines 31 – 38, Gao); mark a subsequent data element as in-use when a

breakpoint is encountered (column 3 lines 39 – 50, Gao); create a recommencement

reference to a subsequent data element column 4 lines 36 – 49 and 62 – 67, Gao

discloses the breakpoint being encountered using figure 5 A&B using elements 510 and

525, creating a recommencement reference to a subsequent element in Gao is clearly

found in column 2 lines 46 – 58, column3 lines 9 – 16 and lines 56 – 59. when the

breakpoint has been marked and the flag set as in-use the recommencement point is

the one at breakpoint when the flag is unset or search for another container is made

according the algorithm in figure 5A&B); and enable recognition of other data requests

(column 4 lines 60 – 66, Gao).

Gao however does not disclose the relinquishing of control as a requirement as

explicitly being claimed in definition of breakpoint.

Marcotte discloses the condition where relinquishing of control may be required

and this is explained in figure 2 and column 7 lines 26 – 65. Here Marcotte discloses

how the lock that is help can be in a priority state and thus the queue would have to

wait, similarly if the queue that was requiring the lock was in priority state the current item would have to relinquish the lock.

It would have been obvious to one of ordinary skill in the art of data processing at the time of the present invention to combine the teachings of cited references because both inventions are directed to the same field of study of lists and locks in data processing. Furthermore, the state of priority and the lock and its release capabilities of Marcotte reduce lock contention of Gao's method (column 4 lines 4 – 39, Marcotte).

10.   Claims 14 – 18 are rejected under the same rationale as claim 13 above. For further citations and references see below.

With respect to claim 14,

Gao as modified discloses the computer readable medium of claim 13 wherein the data service module, when executed by a processor, further minimally causes the processor to: recognize a data request from a first output unit to the exclusion of all other data requests (column 2 lines 46 – 54, Gao); and provide data to a first output unit from a data element according to the recommencement reference (column 5 lines 1 – 9, Gao).

With respect to claim 15,

Gao as modified discloses the computer readable medium of claim 13 wherein the data service module causes a processor to create a recommencement reference by minimally causing the processor to: retrieve a pointer to a data element subsequent to a

current data element (column 2 lines 64 – 67 and column 3 lines 1 – 8, Gao); determine

an identifier associated with a data request received from a first output unit and store

the retrieved pointer and the determined identifier in an associative manner (column 3

lines 64 – 67 and column 4 lines 1 – 9, Gao).

With respect to claim 16,

Gao as modified discloses the computer readable medium of claim 13 wherein

the data service module causes a processor to mark a subsequent data element as in-

use by minimally causing the processor to increment a use counter included in a

subsequent data element (figure 3 and column 3 lines 39 – 51, Gao).

With respect to claim 17,

Gao as modified discloses the computer readable medium of claim 13 wherein

the data service module further minimally causes the processor to receive a delete data

request from an output unit by minimally causing the processor to: determine if a data

element to be deleted is in-use (column 5 lines 10 – 21, Gao); update a

recommencement reference to refer to a data element that is subsequent to the data

element to be deleted (Table 14, Gao); and delete the data element according to the

received delete data request (column 5 lines 25 – 43, Table 14, Gao).

With respect to claim 18,

Gao as modified discloses the computer readable medium of claim 17 wherein

the data service module causes the processor to update a recommencement reference

by minimally causing the processor to: discover a pointer according to a data request

identifier (column 5 lines 1 – 9, Gao); and replace the pointer with a pointer to a data

element that is subsequent to the data element to be deleted (column 5 lines 10 – 17,

Gao).

With respect to claim 19,

Gao discloses an apparatus for storing and retrieving data comprising: means for

locking a linked list (column 2 lines 46 – 54, Gao); means for retrieving data from an

element in the linked list and also advancing to a subsequent element while a

breakpoint is not encountered (Figure 3, column 3 lines 51 – 59, Gao); means for

marking the subsequent element in the linked-list as in-use when a breakpoint is

encountered (column 3 lines 39 – 50, Gao); means for creating a recommencement

reference to the subsequent element (column 4 lines 36 – 49 and 62 – 67, Gao

discloses the breakpoint being encountered using figure 5 A&B using elements 510 and

525, creating a recommencement reference to a subsequent element in Gao is clearly

found in column 2 lines 46 – 58, column3 lines 9 – 16 and lines 56 – 59. when the

breakpoint has been marked and the flag set as in-use the recommencement point is

the one at breakpoint when the flag is unset or search for another container is made

according the algorithm in figure 5A&B)); and means for unlocking the linked list

(column 4 lines 60 – 66, Gao).

Gao however does not disclose the relinquishing of control as a requirement as explicitly being claimed in definition of breakpoint.

Marcotte discloses the condition where relinquishing of control may be required and this is explained in figure 2 and column 7 lines 26 – 65. Here Marcotte discloses how the lock that is help can be in a priority state and thus the queue would have to wait, similarly if the queue that was requiring the lock was in priority state the current item would have to relinquish the lock.

It would have been obvious to one of ordinary skill in the art of data processing at the time of the present invention to combine the teachings of cited references because both inventions are directed to the same field of study of lists and locks in data processing. Furthermore, the state of priority and the lock and its release capabilities of Marcotte reduce lock contention of Gao's method (column 4 lines 4 – 39, Marcotte).

11.   Claims 20 – 22 are rejected under the same rationale as claim 19 above. For further citations and references see below.

With respect to claim 20,

Gao as modified discloses the apparatus of claim 19 further comprising: means for locking the linked list (column 2 lines 46 – 54, Gao); means for determining a subsequent element in the linked list according to the recommencement reference (column 5 lines 1 – 9, Gao); and means for retrieving data from the determined subsequent element (column 5 lines 10 – 17, Gao).

With respect to claim 21,

      Gao as modified discloses the apparatus of claim 19 further comprising a means

for deleting an element in the linked-list (column 5 lines 10 – 21, Gao).

With respect to claim 22,

      Gao as modified discloses the apparatus of claim 21 wherein the means for

deleting an element comprises: means for determining if the element to be deleted is in-

use (column 5 lines 10 – 21, Gao); means for updating a reference to the element to

refer to a subsequent element in the linked list when the element in is in-use (Table 14,

Gao); and means for deleting the element (column 5 lines 25 – 43, Table 14, Gao).

Conclusion

12.   THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded

of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NAVNEET K. AHLUWALIA whose telephone number is (571)272-5636.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alam T. Hosain can be reached on 571-272-3978. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Navneet K. Ahluwalia/
Examiner, Art Unit 2166

Dated: 10/10/2008

/Hosain T Alam/
Supervisory Patent Examiner, Art Unit 2166